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A
Quadruplet of Inventions,

CONSISTING OF A
DESCRIPTION of a NOCTURNAL or DIURNAL
TELEGRAPH;

A PROPOSAL for
AN UNIVERSAL CHARACTER;

AN
EASY and PRACTICAL CONTRIVANCE for
Preventing BOATS from SINKING;

AND
A SCHEME
FOR FACILITATING
THE PROGRESS OF SCIENCE,
Exemplified in the Osteological Part of Anatomy.

THE SECOND EDITION.

By THOMAS NORTHMORE, Eſq. M. A. F. S. A.

EXETER:
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27 MAY 58

In tenui labor, at tenuis non gloria; ſi quem
Numina læva ſinunt.

En toute eſpèce de projet, il y a deux choſes à conſidérer; premièrement, la bonté abſolue du projet; en ſecond lieu, la facilité de l'exécution.

ROUSSEAU.

CLEVE, Jan. 14, 1799.

DEDICATION *to the* FIRST EDITION.

TO MY FRIEND

WILLIAM BURDON, Esq.

Fellow of Emanuel College, Cambridge.

" *Parturiunt montes; naſcetur ridiculus mus.*

" IN your tranſlation of Plutarch's " Treatiſe on the Diſtinction between " a Friend and a Flatterer, you ſignified your intention of publiſhing the " original with notes; and now, forſooth! you preſent us with nothing " but two ſtale inventions, and an " Eutopian prodigy.§" Have patience, my

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§ The ſcheme for preventing boats from ſinking, is now firſt added to this edition.

my excellent Northumbrian, all in good time; *exiſting circumſtances* are materially changed, and man, you know, is a creature of circumſtances, "a recipient of perceptions." I now therefore beg your acceptance of theſe trifles, they may ſerve to relax your mind from ſeverer ſtudies; I wiſh, in relaxing your mind, they may in the leaſt contribute towards a reſtoration of your health.

Two of the following inventions, viz. the *Telegraph* and *Univerſal Character*, have, as you know, already appeared in publick, during the courſe of the years 1794, and 1795, in the Repertory of Arts and Manufactures. To the latter of them I have added nothing new; to the former only an abridged tranſlation of a paſſage in Polybius. Indeed from the reſemblance of the French Telegraph to that of Polybius, as far as relates to the end in view, I am almoſt inclined to believe that the author of the former was led to turn his thoughts to the ſubject, from an acquaintance with the latter, more particularly as Rollin in his Ancient Hiſtory has given a copious account of it. Be that as it may, I am firmly perſuaded that if a man of ſenſe were attentively to peruſe the various inventions of the Ancients, with the view of ſelecting ſuch of them as appeared to him of importance, and were to preſent them to the publick in a modern dreſs, he would produce a work of conſiderable utility. It is really aſtoniſhing how many uſeful inventions now lie dormant, amid the old Greek Scholia,

> How many a flower is born to bluſh unſeen,
> And waſte its ſweetneſs on the deſert air.

Permit me to conclude this letter with an example of a contrivance much in uſe among the Spartans. It was called the Scytale, and may be thus deſcribed from Plutarch and Suidas. When the magiſtrates of Sparta wiſhed to convey any intelligence of importance to the General of their armies, they uſed to wrap a long narrow ſlip of parchment round a ſtaff in ſo regular a manner as to leave no interſtice. Upon this they wrote their orders. The parchment was then unwound, and ſent to the General, who, having another ſtaff of *exactly the ſame* dimenſions, applied it in the ſame manner, and thus thoſe characters which were before without ſhape or connection became perfectly legible.

V. V.

THO. NORTHMORE.

CLEVE, Jan. 25, 1796.

DESCRIPTION

OF A NOCTURNAL OR DIURNAL

TELEGRAPH.

THAT the French Telegraph is an invention juſtly intitled to the praiſe of ingenuity and ſimplicity, is certain; yet it appears to me to labour under a defect that takes much from its utility; I mean that it is not calculated to convey intelligence by night. It was this defect that firſt induced me to turn my thoughts to the ſubject; whether ſucceſsfully or no, the reader may determine.

But before I proceed, I beg leave to obſerve that the Telegraph, new as it appears, is new only in name; the invention is of very ancient date; for Polybius, who flouriſhed near 2000 years ago, gives an accurate account of a nocturnal one, invented by Cleoxenus, or Democlitus, and improved by himſelf, of which the following is an abridgement.

He begins by obſerving, that as opportunity is of great conſequence in all human affairs, ſo is it eſpecially in war, and of all the various inventions that have contributed to its attainment, none has been of ſuch ſervice as that of ſignals by fire. But this contrivance is in ſome meaſure rendered uſeleſs by reaſon of its too great ſimplicity; every circumſtance muſt be agreed upon before-hand; if therefore, out of the infinite variety of human concerns, any event ſhould happen unprovided for, ſuch a method would be of no avail. To remedy this defect, continues Polybius, let the whole alphabet be diſtributed into five columns, each of which, except the laſt, will contain five letters. Theſe columns are then to be fixed upon five tablets of wood; and the parties who are to give and receive the intelligence are to agree upon the ſignal of preparation, which we will ſuppoſe to be the elevation of two torches. This ſignal being anſwered, the torches are then lowered. The perſon who gives the intelligence is now to elevate ſuch a number of torches on the *left* hand, as ſhall correſpond to the number of the column or tablet in which the firſt letter of the intelligence is to be found; for inſtance, if it be in the firſt column, he will lift up only one torch; if in the ſecond, two; and ſo on. The ſame thing is then to be done on the *right* hand, to ſignify the particular letter of the column.

To illuſtrate the above by a familiar example, ſuppoſe the intelligence conveyed to be, that the French fleet of thirty ſail of the line were off Maker: the ſentence muſt firſt be abridged thus, *French, thirty ſail, off Maker*. The letter F being the firſt in the ſecond tablet, two torches muſt be elevated on the left, and one on the right. The letter R being the third in the fourth tablet, there muſt be four torches raiſed on the left, and three on the right, and ſo on. In order to diſtinguiſh the right from the left, a geometrical inſtrument containing two tubes was made uſe of.*

It is not my intention to enter further into detail; ſuffice it to ſay, that from this account of Polybius I received a hint, which furniſhed the ground-work of what I am now going to preſent to the reader.

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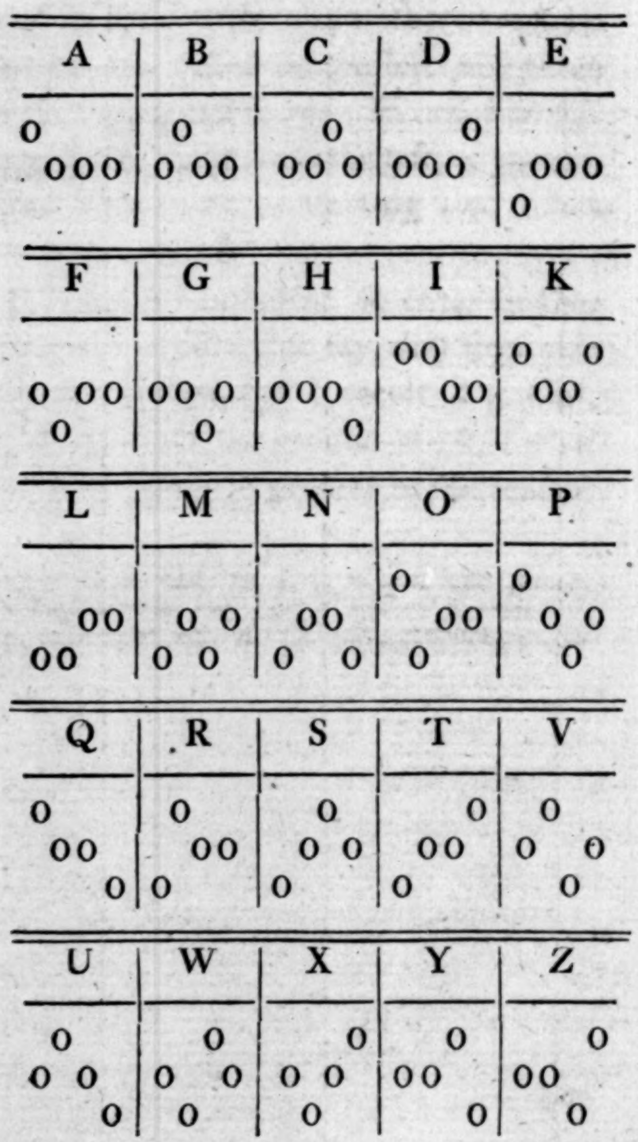
* See Polyb. Hiſt. lib. x. p. 261—6. Edit. Erneſt. The Engliſh reader may conſult Rollin's Ancient Hiſtory, book xvii. ſect. vi. Cf. Polyæni Strategem. vi. 16; 2.

For

A Nocturnal or Diurnal TELEGRAPH.



A	B	C	D	E
o ooo	o o oo	o oo o	o ooo	ooo o

F	G	H	I	K
o oo o	oo o o	ooo o	oo oo	o o oo

L	M	N	O	P
oo oo	o o o o	oo o o	o oo o	o o o o

Q	R	S	T	V
o oo o	o oo o	o o o o	o oo o	o o o o

U	W	X	Y	Z
o o o o	o o o o	o o o o	o oo o	o oo o

For a **Nocturnal Telegraph**, let there be four large concave reflecting lamps, each containing the greateſt quantity of light poſſible; let them be placed on the top of an obſervatory, parallel to the horizon, and lying on the ſame plane. Let each of theſe lamps be capable, by means of a winch, either of elevation or depreſſion to a certain degree. By elevating or depreſſing one or two of them a great variety of arrangements will be produced, as the annexed ſcheme will explain, taking care that each lamp be reſtored to its place after every arrangement. In the firſt and laſt obſervatory there need only be a ſet of *ſingle* lamps, but in the others each muſt be *double*, ſo as to face both the preceding and ſubſequent obſervatory; and every obſervatory ſhould be furniſhed with two teleſcopes. The proper diameter of the lamps, and their diſtance from each other, cannot be aſcertained but by experience,

perience, and will vary according to the diſtance of the obſervatory.

I have fixed on *four* lamps, as being the number that appears beſt to unite ſimplicity and perſpicuity.

To convert this machine into a *Diurnal* Telegraph, nothing more is neceſſary than to inſert, in the place of the lamps, gilt balls, or any other conſpicuous bodies.

It is evident that the *principle* upon which this machine depends, is, the number of changes, or variety of poſitions, which can be produced from a given number of moveable objects; and I make this remark becauſe it appears to me, that nothing can tend ſo much to the improvement of human inventions, as a clear, and conciſe ſtatement of the *principle* upon which they depend. It ſhould be their conſtant appendage, as the moral is to a fable; for men in general are too indolent to exert their powers of mind, unleſs a *general* view of the ſubject is preſented to them.

The new French Aeroſtatic Telegraph is framed upon the principle of the one above deſcribed.

Propoſal for an Univerſal Character.

PART I.

WHEN I firſt committed to paper my thoughts upon the following ſubject, I had not even the moſt diſtant ſuſpicion that any thing ſimilar to them had ever before appeared in public. I afterwards found, and, in my ſecond letter to the Repertory of Arts and Manufactures, dated June 1795, mentioned an extract from the Journal litteraire, anno 1720, which ſeemed to bear ſome reſemblance to what I had propoſed; but of this the reader ſhall judge preſently. I will previouſly beg permiſſion to ſtate the progreſs of my own ideas upon the ſubject.

I originally called this invention a Pangraph, or *a mode of writing by which the various nations of the earth may communicate their*

their ſentiments to each other. This appellation appeared to me the moſt ſuitable, being at that time little aware of the facility with which the character might be ſpoken, and conſequently become, as far as regards the common concerns of life, an univerſal *language*. The want of ſuch a medium has long been a ſubject of lamentation among men of letters; hence the various plans that have been propoſed by Biſhop Wilkins, Leibnitz, and others, which, if I may be allowed an opinion, have failed of ſucceſs chiefly by reaſon of their being too complex and difficult of attainment. That mine will be more ſucceſsful I do not promiſe myſelf; I can only ſay that I have ſtudied ſimplicity.

The original thought that occurred to me, and which is the ground-work of the whole ſuper-ſtructure, is the following; "That if the *ſame numerical figure* be "made to repreſent the *ſame word* in all "languages, an univerſal medium is im"mediately obtained." This I mentioned to a few friends, who agreed with me in the practicability of it, and ſaw only one objection, viz. that which originated from the diverſity of idioms. But this objection ſurely cannot be thought of much weight, when we conſider that every ſchool-boy has daily to encounter it in conſtruing his Terence. If a foreigner write to me, he of courſe will ſtudy plainneſs of language, and I muſt be dull indeed, let his idiom vary ever ſo much from my own, if I cannot make out common ſenſe when I have every word before my eyes.* Such was my original thought, but it was ſoon perceived capable of improvement; for inſtead of uſing a figure for *every* word, it will be neceſſary to apply one only to every *uſeful* word; and we all know how few words are abſolutely neceſſary to the communication of our thoughts. Theſe too may be much abbreviated by the adoption of certain *uniform fixed* ſigns, to expreſs the various caſes, numbers, genders, degrees of compariſon, of nouns; tenſes, and moods of verbs, &c. Words of negation, diminution, exceſs, &c. may alſo be expreſſed by prefixed ſigns. A few examples will more fully explain my meaning.

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* One of the very candid reviewers of this little work has ſtarted another objection, viz. the difficulty of retaining this character in the memory. But to this objection I anſwer with much deference, that in my opinion, as far as regards the firſt part of the character, there would be but little occaſion for any exertion of memory; the ſmall pocket numerical dictionary ſhould be the conſtant companion both of the writer and the reader: and though I allow the objection to be of great weight in relation to the ſecond part, yet a numerical arrangement might *perhaps* be ſo contrived, according with the radicals of words, as very conſiderably to abridge the neceſſity of conſtant reference to the dictionary.

Suppoſe a numerical dictionary, adapted to a variety of languages, already in uſe. Let what follows be an extract from it.

The number 8 repreſents the word *I.*
10 - - *day*
13 - - *am, art, is, are,* i. e. the preſent tenſe indicative mood of the verb, *to be.*

The number 16 repreſents the word *place*
17 - - *corrupt*
19 - - *this, that*
23 - - *who, which*
26 - - *make*
27 - - *wiſdom*
29 - - *nothing*
30 - - *natural*
32 - - *beautiful*
35 - - *ſlave*
37 - - *man*
39 - - *near*
40 - - *virtue*
45 - - *liberty*
48 - - *take away*
50 - - *worth, value*
53 - - *his, hers, their*
59 - - *amiable*
61 - - *half*
70 - - *than*
71 - - *without*
75 - - *brute.*

We will now ſuppoſe that in the preface to the above dictionary the nature and power of the prefixed ſigns are explained with clearneſs and brevity. Take an example.

The number 48	repreſents the indicative mood preſent tenſe of the verb - -	*take away*
.48	perfect tenſe	*took away*
:48	perfect participle -	*taken away*
48:	preſent participle -	*taking away*
48.	future - -	*will take away*
$\overset{\smile}{48}$	potential mood	
37	nominative & accuſative caſe of the noun -	*a man*
$\overset{..}{37}$	genitive - -	*of a man*
$\overset{...}{37}$	dative - -	*to a man*
$\overset{\frown}{37}$	feminine -	*a woman*
+37	plural - -	*men*
59	poſitive - -	*amiable*
$\overset{\wedge}{59}$	comparative	*more amiable*

$\overset{\wedge}{59}$ ſuperlative *moſt amiable*
— 59 negation - *unamiable.*

How many ſigns may be neceſſary I will not take upon me to determine, it being my opinion, expreſſed in my ſecond letter to the Repertory, that the beſt method of bringing any matter of this ſort to perfection, is to lay it before a company of literary men. I ſhall now preſent the reader with a few ſentences written in this character, and explained in the above extract.

29, 13, $\overset{\wedge}{32}$, 70, 27; 29, $\overset{\wedge}{59}$, 70, 40.
Cicero.

There would be no difficulty in comprehending the above ſpecimen, though it were written in the language of the Chineſe.

"*Nothing is more beautiful than wiſdom,*
"*nothing more amiable than virtue.*"

71, +$\overset{\frown}{37}$, +8, $\overset{\smile}{13}$, +75. *Otway.*
"*Without women we ſhould be brutes.*"

30,

30, 16, $\ddot{40}$, 13, $\dot{39}$, $\dddot{45}$. *Monteſquieu.*

"*The natural place of Virtue is near to Liberty.*"

10, 23, 26, $^{+}37$, $^{+}35$, 48, 61, 53, 50.
Homer.

This ſentence is left for the reader to find out. It may be worth while to obſerve that thoſe languages which do not expreſs the pronoun before the verb, as the Greek and Roman, may apply it, in a ſmaller character, ſimply to denominate the *perſon*; thus, inſtead of $^{+}8$, $.\breve{1}3$, in the ſecond inſtance, *we ſhould be*; it might be written $^{+}8$ .13, which will ſignify that the verb is in the *firſt* perſon, and will ſtill have the ſame meaning.

The ſpecimen here preſented to you, Reader, is merely a rough ſketch of my deſign, and I purpoſely leave it imperfect that others may have an opportunity of ſuggeſting their improvements. I ſhall therefore conclude this *firſt* part of the Univerſal Character by obſerving that, in my opinion, five or ſix thouſand *ſelect*

words,

words, properly arranged in a ſmall numerical dictionary, would anſwer all the ends propoſed. I am led to adopt this opinion, becauſe not only ſynonimous words might be omitted, but alſo derivative adverbs, &c. which might be expreſſed by means of the prefixed ſigns.

◆

Propoſal for an Univerſal Character.

PART II.

I NOW come to that part of the Univerſal Character which relates to its being *ſpoken*, and the facility with which this may apparently be performed is extraordinary.

Firſt then, the ten numerals ſhould be accurately diſtinguiſhed by ten ſimple names: theſe I would recommend to be monoſyllables, eaſy of pronunciation in *all* languages, and, if poſſible, they ſhould be ſo contrived as to run without difficulty into one another. For the preſent I will call them by the common Engliſh terms, though I have no doubt that imaginary appellations ought to be preferred.

Secondly, I would pronounce each numeral by its component parts, after the manner of accomptants. Ex. gr. Let the number 5943 repreſent the word *Horſe*; I would not ſay, *five thouſand nine hundred and forty three*, but more ſimply, thus, *five*, *nine*, *four*, *three*, and ſo through a whole ſentence, making the proper ſtop between each of the words.

Thirdly, in the ſame manner to each of the *prefixed ſigns* a diſtinct appellation muſt be appropriated, to be pronounced immediately after the numeral to which it is an appendage. For inſtance; let the monoſyllable *plu* be the appellation or ſign of the plural number; *five*, *nine*, *four*, *three*, *plu*, would become *horſes*. But this method may be much abridged in the following manner. For ſuppoſing the ſigns to amount in number to forty; then inſtead of appropriating a diſtinct appellation to every ſign, I would ſubſtitute for them the firſt forty numerals, and ſay, as in Algebra, that a term is in the power of ſuch a number, which may be expreſſed by the word *under*, or ſome other more ſimple denomination. Ex. gr.

Let 5943 repreſent the word *horſe*, and let 4 be the ſign of the plural number; I would write the word thus, $\frac{4}{5943}$, and pronounce it *five*, *nine*, *four*, *three*, in the power of, or *under*, *four*. By theſe means eleven or twelve ſounds would be all that were required, and time and uſe would much abbreviate the pronunciation.

Thus, Reader, have I briefly laid before you the progreſs of my ideas upon this intereſting ſubject, upon which I have thought it unneceſſary to enlarge for reaſons already ſtated; but I cannot in juſtice conclude without obſerving that, ſome little time after the publication of my firſt letter in the Repertory of Arts and Manufactures, on reading the Encyclopædia Britannica, article *Character*, vol. iv. p. 337, I met with an extract from the Journal Litteraire, anno 1720, the author of which had propoſed the Arabic, or numerical figures, for Univerſal Characters. "The combination

“ tion of theſe nine (he obſerves) are “ ſufficient to expreſs diſtinctly an incredible quantity of numbers, much more “ than we ſhall need terms to ſignify our “ actions, goods, evils, duties, paſſions, “ &c.” From which and what follows, it appears to me (who have no opportunity of ſeeing the original) that the author meant, in the ſame extenſive ſenſe as Wilkins and Leibnitz, that his characters ſhould, in an unlimited degree, and without any intermediate aſſiſtance, repreſent *things*; and conſequently the difficulty of attaining them, notwithſtanding the univerſality of the character itſelf, is not much, if at all, diminiſhed. With reſpect to the pronunciation of his character, he ſeems totally to lay it aſide.

I ſhall now conclude with the ſame obſervation that I have made elſewhere, that I have thought it right to mention this circumſtance, as, if my readers ſhall ſo determine, I am very willing to forego the claim of originality, provided I can contribute in the leaſt either to their amuſement, or to their advantage.

P. S. The Univerſal Characters, hitherto attempted, have been framed upon the baſis of ſubſtituting new words *in lieu* of thoſe already in uſe; whereas this character reſts upon the principle of *adding* a new general medium to each particular one: The principle of the former adopts *ſigns for things*; that of the latter, *ſigns for words*; and conſequently eſtabliſhes, as it were, *two* intermediate ſteps between ideas and things.

An eaſy and practical Contrivance for preventing Boats from ſinking.

OF all inventions, thoſe which have for their object the preſervation of the lives of men, are moſt deſervedly entitled, if not to the approbation, at leaſt to the attention of the publick. It is upon this ground that I ſhall venture to lay before them a ſcheme, which, beſides that it has for its object ſo deſirable a good, appears to me to be eaſy of execution, and unattended with any great expence.

It is well known that a boat, which has no ballaſt, will not ſink, though it be filled with water. The ballaſt is the chief, or only cauſe of its ſinking. If then the ballaſt can by any means be removed, and the boat be otherways rendered conſiderably more buoyant, at the moment when the waves break into her, the lives of men may be ſaved. For this purpoſe let the ballaſt conſiſt of ſand-bags of a determinate weight, ſay 14lbs. each, and to each bag let there be attached, by means of a hook, 3lbs. of cork, or any other light ſubſtance, either ſolid, or hollow, which may be ſufficient, or more than ſufficient, to keep it afloat. Now if, in addition to the above, we adopt alſo the propoſal of Mr. Lukin,* viz. that of filling various parts of the boat, ſuch as, under the ſeats, thwarts, &c. with the ſame light materials; it is manifeſt, that as ſoon as a wave breaks into the boat, the cork will ſuſpend the ballaſt, and that which is concealed in the other parts, will increaſe conſiderably the buoyancy of the veſſel. In the mean time the ballaſt may be detached from its float, and flung overboard.

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*See the Repertory of Arts and Manufactures, No. 13.

It may be objected to this contrivance, that it will not prevent a boat, which has a ſail, from being overſet. But to this objection I reply; firſt, that in a very heavy ſea, or when the danger is imminent, the ſail will probably be lowered; and ſecondly, that at all events the boat will not ſink, and every one may have a chance of ſeizing one of the floats. But perhaps the objection may be entirely overruled by ſtating, that as a boat can only overſet by the ballaſt falling to leeward, ſo if the ballaſt be fixed down in its place, by means of a hook or otherways, (in which caſe the floats may be removed to any more eligible ſituation) the whole veſſel, with its maſt and ſail, will become a lever, of which its ſide is the fulcrum, and as ſoon as it fills with water, will be reſtored to an upright poſition.

Propoſal for facilitating the Progreſs of Science, exemplified in the Oſteological Part of Anatomy.

A modern Author in his Eutopian Syſtem of Government eſtabliſhed at Makar, has enacted among other laws, "that "all ſciences be freed from abſtruſe terms, "which are now the clog to education." Upon this he makes the following obſervation in a note ſubjoined. "What is "the reaſon that ſciences are ſo difficult "of attainment? One of the reaſons is, "becauſe they are inveloped in a maſs "of unintelligible names. If in lieu of "the Greek, Latin, and fanciful appel"lations with which Aſtronomy, Ana-

"tomy, Botany, Chemiſtry,[*] &c. are at preſent ſurrounded, (and which conſtitute, as it were, a monopoly of thoſe ſciences to the Grecian and Roman) they were illuſtrated by plain Engliſh terms that *convey meaning*, to how much greater perfection would thoſe ſciences ſpeedily arrive? And again, p. 132-3, "The Greeks and Romans, from whom moſt of our knowledge is derived, very naturally and wiſely gave appellations in their own tongue to their various improvements and diſcoveries. The greateſt part of theſe appellations European nations religiouſly adhere to, ſo that the modern ſtudent is under the

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[*] This is to be underſtood as relating to the old chemical nomenclature; and what is ſaid of Greek, and Latin, muſt be taken with ſome grains of allowance.—Where a new ſcientifick nomenclature is to be framed, to adopt certain expreſſions, particularly thoſe of greateſt import, from the dead languages, may very fairly be allowed to the univerſality of ſcience. At the ſame time it muſt not be forgotten, that education ſhould be rendered as eaſy as poſſible, and this cannot be done better, than by adhering to our native tongue. If it may afterward become neceſſary to latinize a vocabulary, where is the difficulty?

“ neceſſity of cultivating the Greek and
“ Roman languages previous to his acquiſition of this or that ſcience. Nor
“ is this all. Several of the original appellations being proved by ſubſequent
“ diſcoveries to be abſurd and fanciful,
“ the ſtudent has to wade through additional difficulties to underſtand whence
“ they originated.”—The author has not given the publick any ſpecimen of what he alludes to, but has left that for his friend to do. I would not however have the reader haſtily ſuppoſe by what I am now writing, that I am an enemy to all terms of art. No! I readily ſubſcribe to the obſervation of Judge Blackſtone,* that “ terms of art there will unavoidably “ be in all ſciences.” All I inſiſt upon is, a ſimplification of thoſe terms, and that, as we have ſo copious a language, and one ſo “ well adapted to compound “ expreſſions,” there is no occaſion (at

leaſt

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* Commentaries. Book iii. ch. 17.

leaſt ſo frequently) to recur to foreign tongues.

The ſpecimen which I have choſen is taken from that part of Anatomy which relates to the bones of the human frame, and I have arranged the new and old Vocabulary oppoſite each other that the Reader may be better able to judge whether my ſcheme is likely to anſwer the end propoſed.

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NEW VOCABULARY.	OLD VOCABULARY.
Forehead bone	*Os frontis*
Side head bones, *right and left, and ſo in all other caſes of two ſimilar correſponding bones*	*Oſſa parietalia*
Hind head bone	*Os occipitis*
Temple bones	*Oſſa temporum*
Central head bone	*Os ſphenöides*
Upper olfactory nerve bone, or Upper internal naſal bone	*Os ethmöides*
Cheek bones	*Oſſa malarum*
Upper jaw bones	*Oſſa maxillæ ſuperioris*
External naſal bones	*Oſſa naſi*
Naſal diviſion bone	*Vomer*
Eye corner bone	*Os unguis*
Palate bones	*Oſſa palati*
Lower olfactory nerve bones, or Lower internal naſal bones	*Oſſa ſpongioſa inferiora*
Lower jaw bone	*Os maxillæ inferioris*
Teeth	*Dentes*
Front teeth	*Inciſores*;

New Vocabulary.	Old Vocabulary.
Dog teeth, or pointed teeth, commonly called eye teeth	*Canini*;
Grinders	*Molares*
	Bicuſpides,
	Tricuſpides.
Wiſe teeth, or late grinders	*Dentes ſapientiæ*
Tongue bone	*Os hyöides*
Appendages, right and left	*Cornua parva ſeu appendices*
Ear bones	
Outward, or long drum bone	*Malleus*
Middle drum bone	*Incus*
Little drum bone	*Os orbiculare*
Inner drum, or ſtirrup bone	*Stapes*
Spine bones	*Spina*
1ſt, 2d, 3d, &c. to 24th	*Vertebræ*
	7 *cervicales*
	12 *dorſi*
	5 *lumborum*
Great, or lower ſpine bone	*Os ſacrum*
Little, or loweſt ſpine bones	*Os coccygis*

New Vocabulary.	Old Vocabulary.
Breaſt bones	*Sternum*
Upper	
Middle	
Extreme	*Cortilago enſiformis*
Ribs	*Coſtæ*
1ſt, 2d, 3d, &c.	*Tum veræ, tum falſæ*
Hip bones	*Oſſa innominata*
Superior	*Oſſa ilium*
Inferior	*Oſſa iſchii*
Anterior	*Oſſa pubis*
Shoulder blade	*Scapula*
Collar bone	*Clavicula*
Upper arm bone	*Os humeri*
Long lower-arm bone	*Os ulnæ*
Short lower-arm bone	*Radius*
Wriſt bones	*Oſſa carpi*
Firſt or arm row	
1ſt	*Os ſcaphoïdes*
2d	*Os lunare*
3d	*Os cuneiforme*
4th	*Os piſiforme*
Second, or hand row	
1ſt	*Trapezium*
2d	*Os trapezoïdes*
3d	*Os magnum*
4th	*Os unciforme*

New Vocabulary.	Old Vocabulary.
Hand bones	*Oſſa Metacarpii*
1ſt	1*m. ſeu indicis*
2d	2*m.*
3d	3*m.*
4th	4*m.*
Finger bones	
Firſt of 1ſt, or fore-finger	*Os primæ phalangis indicis*
Middle of ditto	*Secundæ phalangis*
Extreme of ditto	*Tertiæ phalangis*
So of the long, or middle finger	*Digiti medii*
The third, or ring finger	*Digiti annularis*
The little finger, called by a French author auriculaire	*Digiti minimi*
Thumb bones	
Firſt	*Os primæ phal: pollicis*
Middle	*Secundæ*
Extreme	*Tertiæ*
Thigh bone	*Os femoris*
Knee pan	*Patella*
Great leg bone	*Os tibiæ*
Little leg bone	*Fibula*
Upper foot bones	*Tarſus, excepto oſſe calcis*
Firſt	*Aſtragalus*
Middle	*Os naviculare*
Anterior	

New

NEW VOCABULARY.	OLD VOCABULARY.
1ſt, or internal	*Os cuneiforme internum*
2d	*Os cuneiforme medium*
3d	*Os cuneiforme externum*
4th, or external	*Os cuboïdes*
Heel bone	*Os calcis*
Lower foot bones	*Oſſa metatarſi*
1ſt	1*m. ſeu pollicis pedis*
2d	2*m.*
3d	3*m.*
4th	4*m.*
5th	5*m.*
Great, or firſt toe bones	*Oſſa pollicis pedis*
1ſt	*Os primæ phalangis*
2d	*Os ſecundæ phalangis*
Toe bones	
1ſt of 2d toe	*Os primæ phalangis ſecundi digiti pedis*
Middle of ditto	*Os ſecundæ phalangis*
Extreme of ditto	*Os tertiæ phalangis*
And ſo of the 3d, 4th, and 5th, or little toe	
Supernumerary bones, adding the name of the adjacent bone.	*Oſſa triquetra* *Seſamoïdea* *Et ejuſmodi.*

How whimſical were the appellations anciently given to the bones of the human frame, and now preſerved with religious reverence by poſterity, the Engliſh reader may judge from a few ſpecimens. One of the foſſæ of the os Sphenoïdes, or wedge-like bone, (which I have denominated from its ſituation, *central head bone)* has been called Sella Turcica, becauſe it was ſuppoſed to reſemble a *Turkiſh ſaddle*; but of the propriety of this appellation I ſhould conceive that few ſtudents in anatomy are able to judge. The Oſſa unguis are ſo called, on account of a ſuppoſed ſimilitude to a finger nail; but the other name given to them, viz. Lachrymalia, is certainly preferable. OS Hyoïdes, from its being thought like the Greek letter υ. OS Coccygis, the bone of the cuckow, becauſe it was imagined to reſemble the beak of that bird. Clavicula is ſaid to be ſo called from its ſimilitude to the key in uſe among the Ancients. Radius, the ſpoke of a wheel. Scaphoïdes, boat-like. Piſiforme, pea-like, OS tibiæ, from its reſemblance to the ancient pipe, &c. &c.

Where names are given ſo unlike the things named, it is no wonder that the progreſs of ſcience is ſlow. Such whimſical denominations ſerve only, as Blackſtone ſays, "to breed a confuſion of "ideas, and a kind of diſtraction in the "memory."

The advantage then expected to be derived from the foregoing ſcheme is briefly this; that ſtudents, particularly the junior claſs, finding the acceſs to ſcience more plain and eaſy, will be encouraged to proceed; conſequently Science, having a greater number of followers, will be more likely to be brought nearer to perfection. The numbers of young men who forſake the paths of knowledge, intimidated by the difficulties in their road, are greater than generally imagined. Cambridge, Oxford, the Temple, and Lincoln's Inn, annually bear ample teſtimony to what I have advanced.

The preſent improved ſtate of the ſcience of Chemiſtry affords ſtill more convincing proof of the truth of this doctrine. "The word, as the accurate and indefatigable Lavoiſier obſerved, produces the idea, and the idea is a picture of the fact." When every other ſcience ſhall have its impediments removed by the ſame means, it will advance towards perfection with equal rapidity.*

Thus, Reader, have I preſented to you my favourite ſcheme for facilitating the progreſs of knowledge, not indeed with an accuracy according to my wiſhes, but according to my abilities, and will now, for a ſhort time at leaſt, take my leave of you, with the requeſt of the Moraliſt;

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* The above propoſal being once the ſubject of converſation where I was in company, it was obſerved by a gentleman of known talents then preſent, "that ſuch a ſcheme would make the ſcience too eaſy, it would encourage quacks." To this objection I confidently reply, that ſo far from encouraging quacks, it is from the apparent obſcurity of ſcience alone, that quacks are abundant. If every man were enabled in ſome degree to judge of the abilities, and to detect the falſe pretenſions of another, where would quackery find a reſting place?

> —— *Si quid noviſti rectius iſtis,*
> *Candidus imperti.*

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